



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Mueller, *et al.*

Serial No.: 10/021,972

Filed: 12/14/2001

Confirmation No.: 1994

Group Art Unit: 2625

Examiner: John B. Strege

Docket No. 10011310-1

For: **SYSTEM AND METHOD FOR CONFIRMING ELECTRICAL CONNECTION DEFECTS**

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Mail Stop: Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

The Examiner has made particular statements in the Notice of Allowability mailed October 20, 2004 regarding a primary reason for allowance of the subject matter of application claims 1 – 17, 18 – 31, and 32 – 42, which may be viewed as an oversimplification, and if taken out of context, could give rise to an improper interpretation of the claims. For at least this reason, Applicants provide the following comments to ensure proper interpretation of the claims.

Applicants' method claims are directed to a method for confirming defects, which comprises dividing the surface of a printed circuit board into a plurality of views, associating an electrical connection with a corresponding view when a characteristic associated with the connection in an observed image indicates that the connection is defective, analyzing the corresponding view to determine the slope of the surface of the printed circuit board across the view, adjusting the distance between the printed circuit board and a sensor in response to the slope of the view, and observing the characteristic associated with the connection in a subsequent image.

Concerning claims 1 – 17, the Notice of Allowability mailed October 20, 2004 states:

“Regarding claim 1 none of the prior art discloses a method for confirming defects comprising analyzing the corresponding view to

determine the slope of the surface of the printed circuit board across the view, and adjusting the distance between the printed circuit board and a sensor in response to the slope of the view.”

Applicants’ apparatus claims are directed to an improved circuit board inspection system, comprising: means for segmenting a surface of a circuit board in response to an indication that an electrical connection on the circuit board is defective, means for associating the defective electrical connection with a corresponding segment, and means for observing a characteristic of each defective electrical connection that accounts for variation in height of the surface of the circuit board over the corresponding segment.

Concerning claims 18 – 31, the Notice of Allowability mailed October 20, 2004 states:

“Regarding claim 18 none of the prior art discloses an improved circuit board inspection system comprising means for segmenting a surface of a circuit board in response to an indication that an electrical connection on the circuit board is defective in combination with means for observing a characteristic of each defective electrical connection that accounts for variation in height of the surface of the circuit board over the corresponding segment.”

Applicants’ claims 32 – 42 are directed to a defect confirmation program stored on a computer-readable medium. The claims comprise logic configured to segment a surface of a circuit board in response to an indication that at least one of a plurality of electrical connections is defective, logic configured to associate the at least one defective electrical connection with a corresponding segment, logic configured to adjust the focal plane of a sensor that accounts for variation in height of the surface of the circuit board across the corresponding segment, logic configured to record a characteristic of the at least one defective electrical connection, logic configured to identify the electrical connection as acceptable in response to a condition where a measured characteristic value falls within a designated range, logic configured to supersede a previous indication that the electrical connection is defective in response to the logic configured to identify.

Concerning claims 32 – 42, the Notice of Allowability mailed October 20, 2004 states:

“Claim 32 discloses similar limitations to claim 18, and thus is allowable for the same reasons as stated above. Claims 33 – 42 are

dependent on claim 32 and thus are allowable for the same reasons.”

First, the scope and validity of each claim (whether in independent, dependent, or multiple dependent form) should be determined based upon the entire combination of elements/features/steps in each claim, as opposed to only the particular feature or features pointed out by the Examiner absent from the cited art. Furthermore, Applicants’ independent claims 32 - 42 do not recite the limitation “means for observing a characteristic of each defective electrical connection that accounts for variation in height of the surface of the circuit board over the corresponding segment.” Accordingly, Applicants’ defect confirmation program should not be interpreted to include this limitation.

Also, in accordance with 35 U.S.C. Section 282, “[e]ach claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim.” Thus, claims that were not addressed by the Examiner in the Reasons for Allowance should not rise or fall, when construed in terms of validity, with their respective independent claims, but instead should be construed independently of their respective independent claims.

Respectfully submitted,

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